



CITY OF COEUR D'ALENE

WASTEWATER UTILITY DEPARTMENT

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May 23, 2019

VIA EMAIL AND HAND DELIVERY

Mr. Brian Nickel
Office of Water and Watersheds
United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, OW-130
Seattle, WA 98101 83814

Re: Comments on Draft Permit for City of Coeur d'Alene
NPDES Permit No. ID-002285-3

Dear Mr. Nickel:

The City of Coeur d'Alene previously requested an opportunity to respond to separate comments by the Center for Justice and Public Employees for Environmental Responsibility on the City of Coeur d'Alene draft NPDES Permit No. ID-002285-3 that was issued for public comment on February 16, 2007. The City renews its request and asks that EPA consider the following response to the comments on the draft permit.

This response to comments is limited to two issues in the draft permit: the basis for the phosphorus, CBOD and ammonia numeric effluent limitations and the proposed compliance schedule to achieve compliance with these limits. The limited scope of this response to comments is not intended to be an agreement on or lack of objection to other comments, but only to highlight two very significant areas of concern to the City.

In general, neither environmental group fully understands the magnitude of the undertaking that will be required under the draft permit. The City of Coeur d'Alene will be accountable to achieve permit limits that are among the most stringent nationally using technology that has never been applied at the scale of the City's wastewater treatment plant. If EPA is intent upon issuing the City a permit with interim and final numeric effluent limits, the final permit must include a reasonable period of time for the City to achieve compliance with the new limits.

Coeur d'Alene objects to the manner in which the two environmental groups assert effluent limitations should be derived. As a matter of law, Coeur d'Alene is obligated to not cause or contribute to a violation of Washington water quality criteria at the state line. Under the current Washington water quality criteria, the applicable standard for dissolved oxygen in Long Lake is to ensure that human activities considered cumulatively do not cause the dissolved oxygen in the lake to decrease more than 0.2 mg/L below natural conditions. WAC 173-210A-200 Table 200(1)(d)(i). The relevant human activities for the purpose of Coeur d'Alene permit are the combined impact of the Idaho dischargers.

The application of Washington dissolved oxygen water quality criteria, approved as part of the anitdegradation rule by EPA in 2007, was previously used in the development of the Spokane River TMDL based on the assumption that discharges within the 0.2 mg/L limit would have no measurable impact on water quality. See EPA, *Loading Assessment for the Spokane River and Lake Spokane*, at 61-61 (2004). The CE-QUAL model used for developing the TMDL and the draft permit for Coeur d'Alene is also based on very conservative assumptions that will not apply in most years on the Spokane River. Moreover, the Idaho dischargers collectively comprise a small percentage of the pollutant loading to the Spokane River in Washington. The draft permit fact sheet recognizes that the discharges from the Cities of Coeur d'Alene and Post Falls represented approximately 5% of the total anthropogenic phosphorus loading to Lake Spokane in 2003. (The Hayden Area Regional Sewer Board wastewater treatment plant (WWTP) was not included in this calculation because it did not discharge to the Spokane River during the summer of 2003.) Non-point source contributions of the three pollutants of concern are insignificant in the Idaho reach of the Spokane River. Combining all of these factors, the conservative water quality criteria, the assumptions in the model and relatively minor contribution of Idaho dischargers, the resulting numeric effluent limitations are not, when implemented, likely to cause or contribute to a violation of water quality standards.

The proposed phosphorus limits for Coeur d'Alene are, if anything, too conservative. The assumptions made in deriving the proposed limits are well within the legal standard that upstream dischargers not cause a detectable change in the water quality in the downstream state. This is the legal standard that applies to Idaho dischargers under *Arkansas v. Oklahoma*, 503 U.S. 91 (1992).

It would be improper for EPA to consider downstream sources and allocate waste loads to Coeur d'Alene. The environmental groups misconstrue 40 CFR § 122.44(d)(ii) as requiring EPA to account for all sources of pollution on the river as part of an individual permit decision. If EPA is going to engage in load allocation as demanded by the environmental groups, it should be on the same terms as the Spokane River TMDL. The revised draft TMDL issued on September 12, 2007, implements a twenty year strategy where dischargers will seek substantial reductions in phosphorus loading through nonpoint source protection and through implementation of new treatment technologies. Ex. 1, Draft Spokane River and Lake Spokane Dissolved Oxygen TMDL, 70-71. The TMDL provides for continuing review and readjustment of the goals during the twenty year period.

On September 5, 2007, the State of Washington also issued draft NPDES permits to the current Washington dischargers: City of Spokane NPDES Permit No. WA-002447-3; Liberty Lake Water and Sewer District NPDES Permit No. WA-0045144; Kaiser, Aluminum NPDES No. WA-0000892; and Inland Empire Paper Company NPDES No. 000082-5. See Ex. 2. These permits are structurally similar to the Coeur d'Alene draft permit in that each discharger must select and implement new treatment technology and nonpoint source control programs. The Idaho permits are substantially more stringent, however, by imposing interim and final numeric

effluent limitations for phosphorus, CBOD5 and ammonia to meet Washington waste load allocations (WLAs) for dissolved oxygen.

The Washington permits, in contrast, contain no interim or final numeric limits to meet phosphorus, CBOD5 and ammonia water quality criteria or TMDL WLAs for dissolved oxygen. The rationale for this approach is provided in the Fact Sheet for the City of Spokane draft permit:

Based on the TMDL technical reports, the stoichiometric relationship of phosphorus, ammonia and CBOD embedded in the computer models and verified by calibration exercises, the Foundational Concepts assumes that efforts to control phosphorus will also serve to control CBOD and ammonia (i.e. phosphorus treatment technology will result in effluent ultimate CBOD and ammonia concentrations below applicable WLAs). This assumption will be continually evaluated as data is collected during the first ten years of the MIP. The 10th year assessment will determine the necessity, if any, for further reductions in phosphorous, CBOD and ammonia in order to achieve the water quality standards for dissolved oxygen. As such, the proposed permit does not contain either final effluent limits based on WLAs or compliance schedules for CBOD and ammonia. If necessary, compliance with the ultimate CBOD and ammonia WLAs will be addressed in the second ten years of the MIP. The Department expects that all principles of the MIP directed toward phosphorus removal will also result in CBOD and ammonia control and reduction. These would include elements such as WLA targets expressed as pounds per day, delta elimination, pollutant trading, etc.

For total phosphorus, the 2017 and 2027 target WLA is 3.49 lbs/day (10µg/L at 41.76 mgd) in 2017 and 4.24 lbs/day (50.77 mgd) in 2027. For the first five year permit cycle, the Foundational Concept document requires the permit be issued with total phosphorus effluent limits adjusted based on performance history. For the proposed permit, enforceable terms will also include the obligation to start, continue, and/or complete certain target pursuit actions as described in the section "Implementation of Foundational Concepts" found below.

Additionally, the permits will specify that a goal of achieving an equivalent of an effluent phosphorus concentration of 10 µg/l phosphorus by the end of the following (second) permit cycle (i.e., in 10 years).

Ex. 3, Draft Fact Sheet NPDES Permit WA 002447-3 City of Spokane's Riverside Park Water Reclamation Facility (the POTW), 19-20.

If EPA intends to subject Idaho dischargers to the same load allocations as the Washington TMDL, the permit limits for Coeur d'Alene should be based on the same assumptions as the conditions for the current Washington dischargers. In that case, Coeur d'Alene should be

regulated in the same manner as the Washington dischargers. The permit should not include numeric limits to address dissolved oxygen but instead rely on the TMDL approach of implementing adaptive management.

Finally, Coeur d'Alene has a well considered basis for requesting a compliance schedule of at least nine years to achieve final effluent limitations in the draft permit as approved by the State of Idaho Department of Environmental Quality in the section 401 certification. The environmental groups argue that technology is readily available to achieve a phosphorus limit of 0.01 mg/l. This absurd contention is based principally on a report recently published by EPA Region 10, D. Ragsdale, *Advanced Wastewater Treatment to Achieve Low Concentrations of Phosphorus* (EPA Region 10, April 2007)

Coeur d'Alene objects to the timing of the release of this report during the comment period on its draft permit. It is not clear why Region 10 chose to issue this report and how the report relates, if at all, to the Idaho permit conditions. The principal author of the report, Dave Ragsdale, has made clear that he is adverse to EPA and the draft permit. See Ex.4, J. Hegengruber, *Spokesman Review*, "Scientist Departure Taints River Cleanup Plan" (Sept. 10, 2007). The bias of the report is amplified by the participation in the development of the document by Ken Merrill from the Department of Ecology. Mr. Merrill, whose extensive self-serving emails have been submitted as part of the comments by the environmental groups, acknowledges in the recent news article that he is no longer invited to participate in the Spokane River TMDL process. *Id.* This conflict of interest is no less than the participation of Bonnie Beavers, legal counsel with the Center for Justice, who is also counsel for the Sierra Club and author of the comment letter on behalf that organization. Coeur d'Alene also objects to the failure of EPA to provide any opportunity for the City to review and comment on the report before it was published. This fact is troubling given the participation of Ken Merrill and Bonnie Beavers in drafting the report and the extensive reliance of Ms. Beavers on the report in her comments on behalf of the Sierra Club.

The report itself is not accurate in its evaluation of treatment plants. The report states, for example, that "[t]he total phosphorus concentrations achieved by some of these WWTPs are consistently near or below 0.01 mg/l." In reality, of the 23 plants included in the report, only Breckenridge, Colorado, Stamford, New York, and Walton, New York actually report average phosphorus less than 0.01 mg/l. These are relatively small plants with rated capacities of 3 mgd, 0.5 mgd and 1.55 mgd, respectively. In contrast to these plants, the much larger 6.0 mgd capacity Coeur d'Alene plant has anaerobic digestion facilities for solids stabilization, which impacts liquid stream performance. It is not technically sound to compare the results from three small plants with larger facilities and unique conditions on the Spokane River.

EPA should acknowledge the process to evaluate treatment technologies that was an important part of the collaborative effort to develop the Washington TMDL for the Spokane River. As part of that process there was a specific workshop held on August 16, 2006, to evaluate treatment technology. That discussion included the applicability of treatment technologies used at other locations and the sensitivity to local wastewater characteristics and water chemistry conditions.

This in turn led to local pilot treatment studies at Inland Empire Paper, the City of Spokane and the City of Coeur d'Alene. Many of the advanced treatment technologies included in the Ragsdale report were tested in these local studies including:

- Zenon Membrane Filtration
- US Filter Trident
- Blue Water Technology Dual Sand Filtration
- Parkson Dual Sand Filtration

The following table presents a summary of the total phosphorus results from the pilot testing in Coeur d'Alene.

Summary of City of Coeur d'Alene Phosphorus Pilot Testing¹

Technology	Final Effluent Total Phosphorus – All Data Reported (µg/l)²	Final Effluent Total Phosphorus – Excluding Data Excursion Due to Equipment (µg/L)³
Zenon ZW-500 Membrane Filtration	67.4	24.1
US Filter Trident THS-1	19.2	19.2
Blue Water Technology BluePro Dual Sand Filtration	21.4	21.4
Parkson D2 Dual Sand Filtration	84.1	39.6

¹ Preliminary Coeur d'Alene pilot study results were presented by Mario Benisch, HDR Engineering, at the August 16, 2006 Treatment Process Workshop.

² Effluent phosphorus performance data (all data) from Table 3 of the City of Coeur d'Alene "Tertiary Phosphorus Removal Technology Pilot Study," Final Draft Report, May 2007.

³ Effluent phosphorus performance data (excluding equipment caused excursions) from Table 4 of the City of Coeur d'Alene "Tertiary Phosphorus Removal technology Pilot Study," Final Draft Report. May 2007.

Contrary to the conclusions in the Ragsdale report, none of the treatment technologies included in pilot testing produced effluent total phosphorus of 0.01 mg/l or less. Further, the variability of pilot testing results exhibit the sensitivity to local applications, wastewater characteristics, water quality conditions, and site specific operations when pursuing extremely low effluent phosphorus. For example, the Parkson Dynasand D2 Pilot Test Report, February 5, 2007, notes

that the “data collected during this pilot study points to the fact that there was too much soluble non-reactive phosphorus in the waste stream to consistently achieve an effluent Total Phosphorus of less than 0.01 mg/l.” *See* Ex. 5.

It is important to note that pilot testing is highly controlled and represents the best possible conditions under which treatment technologies might perform. Full-scale operations would not be expected to perform as well as pilot testing since full-scale plants cannot be operated under such tightly controlled conditions and must accept the recycle loadings from solids processing facilities.

It would be inappropriate for EPA to rely on the conclusions in the Ragsdale report to shorten the compliance schedule. The conclusions presented in the report as so-called “observations” are not science and they do not reflect a qualified engineering opinion. Actual experience on the ground, with the Coeur d’Alene plant and two other treatment plants on the Spokane River in just the past year demonstrate conclusively that the conclusions in the Ragsdale report are without merit. The conclusions by Mr. Ragsdale in the report are also undercut by the Sierra Club’s own expert, Carpenter Environmental. Far from stating that the technology is immediately available, the memorandum from Carpenter Environmental submitted with Sierra Club’s comments states that it would require four and a half to seven years to complete planning, design and implementation of advanced treatment at Coeur d’Alene.

Coeur d’Alene is committed to improving water quality in the Spokane River. That commitment is reflected in our funding and participation in the collaborative process. It is also reflected in the on-going facility planning by the City. We have asked, based on our experience with our facility, pilot testing in the Spokane River and in consultation with licensed professional engineers who actually design and implement treatment technology, for nine years to achieve compliance with the final limits in the draft permit and our proposed alternative limits for ammonia and CBOD5 as submitted with our earlier comments. This request is reasonable and should be granted.

Mr. Brian Nickel
September 24, 2007
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I appreciate your consideration of these comments and the attached list of additional materials referenced in this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "H. Sid Fredrickson". The signature is fluid and cursive, with a long horizontal stroke at the end.

H. Sid Fredrickson
Wastewater Superintendent

Cc: John Tindall, P.E., IDEQ
Roger Tinkey, P.E. IDEQ

Exhibits Referenced in Coeur d'Alene Response to Comments

1. Draft Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load – Water Quality Improvement Report, Department of Ecology (September 2007)
2. Draft Spokane River NPDES permit issued in September 5, 2007:
 - a. City of Spokane NPDES Permit No. WA-002447-3
 - b. Liberty Lake Water and Sewer District NPDES Permit No. WA-0045144
 - c. Kaiser Aluminum NPDES Permit No. WA-000089-2
 - d. Inland Empire Paper Company NPDES Permit No. WA-000082-5
3. Fact Sheet for NPDES Permit WA 002447-3 City of Spokane - Riverside Park Water Reclamation Facility (POTW) and Spokane County (Pretreatment Program), 19-20
4. J. Hegengruber, *Spokesman Review*, “Scientist Departure Taints River Cleanup Plan” (Sept. 10, 2007)
5. D. Janssen, Dynasand D2[®] Advanced Filtration System Pilot Test Final Report, Parkson Corporation (February 5, 2007).

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